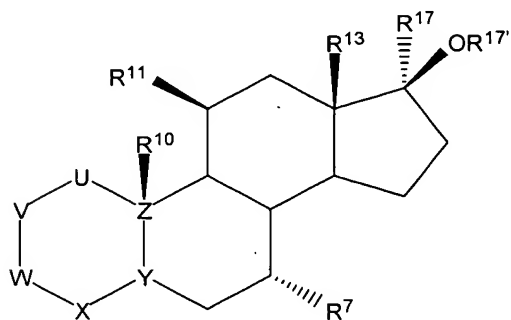


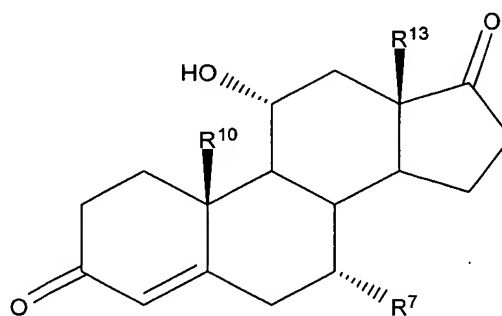
**Microbiological Process for the Production of  $7\alpha$ -Substituted  $11\alpha$ -Hydroxy Steroids,  $7\alpha,17\alpha$ -Substituted  $11\beta$ -Halogen Steroids That Can be Produced Therefrom, Their Process for Production and Use as Well as Pharmaceutical Preparations That Contain These Compounds, as Well as  $7\alpha$ -Substituted Estra-1,3,5(10)-trienes That Can be Produced Therefrom**

**Abstract:**

A novel method of synthesis for the manufacture of upstream products for the production of compounds with general formulas **8**, **10**, and **12** is described. In this synthesis, compounds with general formula **4,B** are produced in a microbiological reaction. The meanings of  $R^7$ ,  $R^{10}$ ,  $R^{11}$ ,  $R^{13}$ ,  $R^{17}$  and  $R^{17'}$  as well as of the grouping U-V-W-X-Y-Z are indicated in the claims.



**8,10,12**



**4,B**